Wisconsin Standards for a Quality Program in Technology and Engineering Education

Related Resources and Documented Evidence

Standard	Related Resources	Illustrative Documented Evidence
Quality Educator(s)		
Standard 1 The educator(s) is highly qualified and appropriately certified to teach all corresponding courses within the program. **Standard 2** The educator(s) has a Professional Development Plan (PDP). **Standard 3** The program is managed by designated personnel at the school district or regional level.	Promising Practices: New Ways to Improve Teacher Quality - http://www.ed.gov/pubs/PromPractice/index.html Allen, M. (2003). Eight questions on teacher preparation: What does the research say? Allen, M. & Palaich, R. (2000). In pursuit of quality teaching: Five key strategies for policymakers. International Technology Education Association. (2003). *Advancing excellence in technological literacy: Student assessment, professional development, and program standards*. Reston: International Technology Education Association. Johnson, K. & Blair, L. (1999). At the heart of the matter: Improving teaching and learning through professional development, *SED Letter,* 11 (2). Reeves, D. (2004). Accountability for learning—How teachers and school leaders can take charge. Alexandria VA Association for Supervision and Curriculum Development. King Rice, (2003). Teacher quality: Understanding the effectiveness of teacher attributes. Wisconsin Department of Public Instruction - Teacher Education and Professional Development - http://www.dpi.state.wi.us/dpi/dlsis/tel/te.html	• Holds a current teaching license • Maintains a professional development plan on file • Provides leadership in professional organizations • Participates in continuing education beyond license renewal • Prepares written, self-mentoring plan • Serves as a cooperating teacher • Writes and obtains grants • Supervises practicum students • Conducts educational/teacher research • Serves on statewide/regional education committees • Collaborates in projects with external partners • Pilots new programs and projects • Mentors initial educators • Participates in local/state/national curriculum development • Serves in role for extra-curricular leadership • Formulates partnerships and collaborates with community agencies

Wisconsin Standards for a Quality Program in Technology and Engineering Education
Related Resources and Documented Evidence

Standard	Related Resources	Illustrative Documented Evidence
Quality Educator(s) *continued*		
	Wisconsin Department of Public Instruction - Teacher Education and Professional Development - Educator licensing and program approval Wisconsin Standards Educator Development and Licensure - http://www.dpi.state.wi.us/dpi/dlsis/tel/standards.html Wyman, W. (2001). Teaching quality: Diverse factors affect teachers' work environment, *Progress of Education Reform*, 2(4).	
Program Planning		
Standard 4 Program implementation will facilitate technological literacy for *all* students. **Standard 5** The program is aligned at the primary and secondary levels with advanced articulation across post-secondary institutions.	Kirts, C (1990). It worked for us, it can work for you: A handbook for local vocational education advisory councils for planning and conducting a program assessment project. University of Alaska/Fairbanks. Center on Education and Work (1994). Workplace education design checklist: a tool for program planning. Madison: University of Wisconsin-Madison. Clark, A. & Wenig, R. (1999). Identification of quality characteristics for technology education programs: A North Carolina case study, Journal of Technology Education, 11(1). International Technology Education Association. (2003). *Advancing excellence in technological literacy: Student assessment, professional development, and program standards*. Reston: International Technology Education Association.	• Collaborates on curriculum projects • Participates on school/district planning team • Aligns local academic standards with state and national standards • Collaborates with post-secondary institutions • Develops a curriculum plan based on state guidelines to curriculum planning • Utilizes community and business partners in program development • Balances course offerings to prepare students for role of technological literacy • Participates in elementary education through direct teaching, team teaching, and collaboration

Wisconsin Standards for a Quality Program in Technology and Engineering Education
Related Resources and Documented Evidence

Standard	Related Resources	Illustrative Documented Evidence
Program Planning *continued*		
	Technology Curriculum Project. (1996). *A framework for the study of technology in New Jersey, 2nd edition*. Trenton: Technology Educators Association of New Jersey. Texas Agency Staff. Program Guide for Technology Education: Technology Education Knowledge and Skills for the 21st Century	• Implements current research-based initiatives and practices, such as, service learning, peer education, problem/project-based learning, authentic instruction and assessment, inter-disciplinary projects, applied academic programs, and brain-based learning
Curriculum, Instruction, and Student Assessment		
Standard 6 The curriculum is developed using child development research, educational equity, recognized educational practices, and state/national/industry standards. **Standard 7** The program fosters a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation. **Standard 8** Co-curricular activity is available and a valued, integral component of the program (i.e., SkillsUSA, TSA, F.I.R.S.T., High Mileage Vehicle, etc.).	Hoachlander, G. (1992). Accountability for vocational education: a practitioner's guide. NCRVE International Technology Education Association. (2003). *Advancing excellence in technological literacy: Student assessment, professional development, and program standards*. Reston: International Technology Education Association. International Technology Education Association. (2000). Standards for technological literacy: Content for the study of technology. Reston, VA. ITEA-CATTS Consortium. (2002). Technology starters: A standards-based guide. Reston: International Technology Education Association. ITEA-CATTS Consortium. (2001). Teaching technology: High school strategies for standards-based instruction. Reston: International Technology Education Association.	• Articulates courses with post-secondary institutions • Provides workplace mentor training • Teaches to multiple learning styles and uses developmentally appropriate curriculum units • Includes problem-based learning experiences, cooperative learning, multi- and inter-disciplinary approaches, service learning, youth leadership, technology integration, and self-reflection • Uses curriculum that allows for differentiation in instruction to challenge students at multiple ability levels • Creates a learning environment that makes a student feel safe and shows comfort in expressing ideas and feelings

Wisconsin Standards for a Quality Program in Technology and Engineering Education
Related Resources and Documented Evidence

Standard	Related Resources	Illustrative Documented Evidence
Curriculum, Instruction, and Student Assessment *continued*		
Standard 9 The program offers ongoing career awareness as a part of the curriculum, emphasizing educational options and post-secondary school success. **Standard 10** Standards-related assessment(s) is integrated with curriculum and instruction to promote meaningful learning and student accountability.	ITEA-CATTS Consortium. (2000). Teaching technology: Middle school strategies for standards-based instruction. Reston: International Technology Education Association. ITEA-CATTS Consortium. (1999). *A guide to develop standards-based curriculum for K-12 technology education*. Reston: International Technology Education Association. MCCTE Crosswalk Project (2003). Resources to Implement the Massachusetts Frameworks: Technology Education. Missouri Department of Elementary and Secondary Education, Division of Career Education (2002)—Missouri Technology Education Guide 2002. http://dese.mo.gov/divcareered/TechEd/Curriculum_Guide_v2.1.pdf Technology Curriculum Project. (1996). *A framework for the study of technology in New Jersey, 2nd edition*. Trenton: Technology Educators Association of New Jersey. Wisconsin Model Academic Standards for Technology Education http://www.dpi.state.wi.us/standards/pdf/teched.pdf WINSS Successful School Guide: Standards and Assessment. http://www.dpi.state.wi.us/sig/assessment/index.html	• Uses written student evaluation of classroom climate and environment for program improvement • Develops a student who is committed to learning, shows positive values, and develops social competencies and positive identity • Holds high expectations, encourages students to do well, and promotes process as well as content • Actively involves parents and community members in classroom • Develops assessment tools with standardized scoring rubrics • Provides opportunities for a student for self-reflection and peer assessment • Implements authentic, performance-based assessment devices and tools; e.g., portfolios, student presentations and demonstrations, anecdotal records, inventories, observations, surveys, action study/research, and interviews • Establishes criteria and develops rubric for assessment with student input • Uses multiple alternative student assessment tools

Wisconsin Standards for a Quality Program in Technology and Engineering Education

Related Resources and Documented Evidence

Standard	Related Resources	Illustrative Documented Evidence
Program Assessment and Evaluation		
Standard 11 Program evaluation will ensure and facilitate technological literacy for *all* students.[1]	Kirts, C (1990). It worked for us, it can work for you: A handbook for local vocational education advisory councils for planning and conducting a program assessment project. University of Alaska/Fairbanks. International Technology Education Association. (2003). *Advancing excellence in technological literacy*: *Student assessment, professional development, and program standards*. Reston: International Technology Education Association. Massachusetts Career and Technical Education Curriculum Resource Center. (2003). *Advisory Committee Guide*. Lexington: Massachusetts Department of Education. Missouri Department of Elementary and Secondary Education, Division of Career Education (2002). *Missouri Technology Education Guide 2002*. http://dese.mo.gov/divcareered/TechEd/Curriculum_Guide_v2.1.pdf Technology Curriculum Project. (1996). *A framework for the study of technology in New Jersey, 2nd edition*. Trenton: Technology Educators Association of New Jersey.	• Plans for ongoing program evaluation is in place • Uses curriculum, instructional, facility, and staffing updates that are based on results of ongoing program evaluations to improve the program • Uses *WI Standards for Quality in Technology Education* as a framework for periodic self-assessments and planning • Incorporates results of program evaluation-planning in end-of-year report • Presents evaluation results to appropriate audiences, such as, administration, guidance, school board, parents, students, and community partners • Writes grant applications for funds to address program areas that need improvement • Develops budget and opportunity/cost analyses

1* Standard P-3 – International Technology Education Association. (2003).

Wisconsin Standards for a Quality Program in Technology and Engineering Education

Related Resources and Documented Evidence

Standard	Related Resources	Illustrative Documented Evidence
Quality School(s)		
Standard 12 The educator(s) is proactive, working with others to enhance the school environment through learning experiences offered in the program.	Bright Beginnings & Family-Community-School Partnership http://www.dpi.state.wi.us/dpi/dltcl/bbfcsp/slhmpage.html Mayer, D., Mullens, J. & Moore, M. (2000). Monitoring school quality: An indicators report. Mathematica Policy Research, Inc. WINSS Successful School Guide: Best Practices http://www.dpi.state.wi.us/sig/practices/professional.html	• Ensures appropriate class size for laboratory and classroom activities • Documents committee work with stakeholders on human growth and development, career education, personal finance, and work-based learning • Ensures representation of technology and engineering on decision-making teams in the school and district • Participates on integrated and applied instructional teams • Actively participates in mission/vision development and strategic planning • Attends professional meetings and conferences to network • Serves as a mentor; supervises student teachers • Attends/presents at state, school board, district, and school committee meetings • Creates informal networks with administrators, school board members, colleagues, and community members • Shares practical reasoning expertise to frame decisions regarding reform • Makes presentations at staff in-services

Wisconsin Standards for a Quality Program in Technology and Engineering Education

Related Resources and Documented Evidence

Standard	Related Resources	Illustrative Documented Evidence
Parent and Community Involvement		
Standard 13 The educator(s) shall communicate opportunities and challenges to all stakeholders. **Standard 14** The educator(s) actively involves faculty, students, parents, community stakeholder groups, and the advisory committee members in continual program improvement. **Standard 15** The program offers a work-based learning component.	Cornell University. III. Keys to success for building the 21st century workforce. Bright Beginnings & Family-Community-School Partnership http://www.dpi.state.wi.us/dpi/dltcl/bbfcsp/slhmpage.html KickStart Initiatives: Connecting America's Communities to the Information Superhighway: A Leadership Guide to getting there - http://www.benton.org/publibrary/kickstart/kick.leadershipguide.html KickStart Initiatives: Connecting America's Communities to the Information Superhighway: Galvanizing the Stakeholders - http://www.benton.org/publibrary/kickstart/kick.leadershipguide.html Bartsch, J. (2001). Community Lessons: Promising Curriculum Practices. Massachusetts Department of Education. Cornell University. III. Keys to success for building the 21st century workforce. Edwards, K. (2000). Everyone's guide to successful project planning: tools for youth: facilitator guide. Portland: Northwest Regional Educational Laboratory. Kirts, C (1990). It worked for us, it can work for you: A handbook for local vocational education advisory councils for planning and conducting a program assessment project. University of Alaska/Fairbanks. National Skill Standards Board Institute - http://www.nssb.org/	• Utilizes community resources for classroom speakers, advisory boards, field trips, job shadowing, mentors, and SkillsUSA-VICA co-curricular activities • Engages in internships/externships • Participates in civic organizations • Maintains diverse makeup of advisory committee representative of community • Prepares advisory committee minutes • Garners advisory committee support and resources • Provides services to and seeks services from parents and other community members and organizations • Incorporates advisory committee recommendations • Creates partnerships with other educational institutions • Uses curriculum and facilities that reflect advisory committee recommendations • Offers community service/service-learning projects

Wisconsin Standards for a Quality Program in Technology and Engineering Education

Related Resources and Documented Evidence

Standard	Related Resources	Illustrative Documented Evidence
Program Resources, Safety, Learning Environment, and Legal Requirements		
Standard 16 The vision/mission of the program is supported by facilities, equipment, technology, and operating budget. **Standard 17** Program operation is in compliance with all state and federal safety laws and regulations. **Standard 18** The educator(s) ensures all students are aware of personal safety issues related to the classroom environment. **Standard 19** The program provides clean, uncluttered, and safe facilities and equipment to support the curriculum and meet the needs of students.	MCCTE Crosswalk Project (2003). Resources to Implement the Massachusetts Frameworks: Technology Education. The Massachusetts Career and Technical Curriculum Resource Center. (2003). *Career and technical safety guide.* Lexington: Massachusetts Department of Education. Pennsylvania Department of Education. *Safety guidelines for technology education & elementary science/technology education*, Bureau of Curriculum and Academic Services, Division of Curriculum and Instruction.	• Develops and implements a safety plan, including checklists for facilities • Makes accessible to student Material Safety Data Sheet (MSDS) information • Posts safety and sanitation policies and procedures • Includes units on health and safety issues in curriculum • Develops scheduled replacement plan for appliances and equipment • Develops department budget and participates in budgeting process • Develops training agreements and *Rules and Regulations* for work-based learning • Demonstrates fairness in classroom practices, such as, discipline strategies and techniques • Follows child labor laws for work-based learning programs • Follows policies and procedures for field trips and student transportation • Follows policy on confidentiality of records • Follows policy on reporting child abuse, sexual activity of minors, and health concerns • Follows statutes and policies related to ensuring equity and diversity

Wisconsin Standards for a Quality Program in Technology and Engineering Education

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Standard	Related Resources	Illustrative Documented Evidence
Equity		
Standard 20 The program uses data to support program improvement that focuses on educational equity.	Sanders, J. (1994). Lifting the Barriers—600 strategies that really work to increase girl's participation in science, mathematics, and computers. Seattle: National Science Foundation. Sanders, J., Koch, J & Urso, J. (1997). *Gender equity right from the start*: Instructional activities for teacher educators in mathematics, science and technology. Mahwah: Lawrence Erlbaum Associates. Sanders, J., Koch, J. & Urso, J. (1997). *Gender Equity Sources and Resources for Education Students*. Mahwah: Lawrence Erlbaum. National Science Foundation. New Formulas for America's workforce: Girls in science and engineering. Reha, L. & Lee Berardi, S. (2003). The nontraditional look: Level I and level II self-study. Illinois Center for Specialized Profession Support, College of Education: Illinois State University. TACKLE (Technology Action Coalition to Kindle Lifelong Equity) Box Project, (2000). Career and Technical Team, Wisconsin Department of Public Instruction.	• Includes diverse student populations; e.g., special education, non-traditional, gender, ethnicity, race, and school-aged parents • Uses non-biased classroom resources, such as, textbooks, artwork, posters, videos, and speakers • Uses classroom examples that demonstrate and recognize the importance of cultural diversity • Models respect for diversity and human dignity

Wisconsin Standards for a Quality Program in Technology and Engineering Education
Related Resources and Documented Evidence

Standard	Related Resources	Illustrative Documented Evidence
Equity *continued*		
	Weber, K. (2004). *Gender inclusive technology education: Interest preferences of male and female students toward activities, content topics, and instructional methods at the middle school and high school levels*. Illinois State University, Normal, IL. Welty, K. & Puck, B. (2001). *Modeling Athena: Preparing young women for work and citizenship in a technological society*. Menomonie, University of Wisconsin—Stout.	